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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CARDONE, JASON D

ART UNIT	PAPER NUMBER
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2142

DATE MAILED: 03/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/328,921

Applicant(s)

BARBER ET AL.

Examiner

Jason D Cardone

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 18-26 and 34-45 is/are rejected.
- 7) ☒ Claim(s) 10-17 and 27-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Attached Office Action.

DETAILED ACTION

1. This action is responsive to the amendment and remarks of the applicant (Paper No. 21) filed on 12/16/03. Claims 1-45 are presented for further examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 18-26, and 34-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al. ("Fukunaga"), USPN 6,144,993, in view of Stein, USPN 6,029,092.

4. Regarding claim 1, Fukunaga discloses a control area network comprising:
a master controller provided with a dispatch component for sending commands [ie. system management computer with the personal computer platform for sending commands, Fukunaga, col. 5, lines 33-58];

a first and second devices respectfully coupled to the master controller, the first device having a first state representing a plurality of data values associated with the first device and the second device having a second state representing a plurality of data values associated with the second device [ie. first and second terminals, Fukunaga, col. 5, lines 1-32, col. 8, lines 1-10 and col. 14, lines 29-67]; and

a device manager disposed to receive a command from the dispatch component of the master controller and to control operation of the first and second devices in response to the command [ie. distributed process controllers, Fukunaga, col. 5, lines 33-44, col. 6, lines 47-53, col. 13, lines 32-44 and col. 14, lines 29-67];

Fukunaga discloses the distributed process controller (device manager) uses an object table to send commands to the terminals (devices) [Fukunaga, col. 11, lines 9-52]. Fukunaga does not specifically disclose constructing a virtual device and coupling the virtual device to the first and second devices to provide control information thereto. However, Stein, in the same field of HVAC management endeavor, discloses constructing a virtual database (device) and coupling the virtual database (device) to the first and second devices to provide control information [Stein, col. 8, lines 18-67 and col. 11, lines 24-60]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a virtual device, disclosed by Stein, into the distributed process control, in order have more modular control over the HVAC (or other) system [Stein, col. 1, lines 25-31].

5. Regarding claim 2, Fukunaga-Stein further discloses the first and second devices each has a device port and the virtual device has a virtual port linked to each of the device ports [Fukunaga, col. 15, lines 20-42] [Stein, col. 13, lines 16-51].

6. Regarding claim 3, Fukunaga-Stein further discloses the virtual device has a virtual device state that is linked to the first and second states, and is adapted to control

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the first and second states [Fukunaga, col. 6, lines 47-53, col. 13, lines 32-44 and col. 14, lines 29-67] [Stein, col. 11, lines 24-60].

7. Regarding claim 4, Fukunaga-Stein further discloses the first and second devices are each channels and the virtual device is a virtual channel [Fukunaga, col. 12, lines 8-23] [Stein, col. 13, lines 16-51].

8. Regarding claims 5, 6, 22, and 23, Fukunaga-Stein further discloses the device manager comprises a component of the master controller, the device manager is operable to utilize the virtual device to maintain the virtual device state and the first and second states in a substantially similar condition [Fukunaga, col. 5, lines 33-49 and col. 6, lines 47-53] [Stein, col. 11, lines 24-60].

9. Regarding claims 7 and 24, Fukunaga-Stein further discloses a data state change request being received by the virtual device, a first generated data state change request being generated by the device manager based on the data state change request and sent to the first device, and a second generated data state change request being generated by the device manager based on the data state change request and sent to the second device [Fukunaga, col. 9, lines 1-22 and col. 9, line 55 – col. 10, line 26] [Stein, col. 11, lines 24-60].

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10. Regarding claims 8 and 25, Fukunaga-Stein further discloses the data state change request is a command sent by the master controller in the control area network [Fukunaga, col. 4, line 47 – col. 5, line 32] [Stein, col. 11, lines 43-60].

11. Regarding claims 9 and 26, Fukunaga-Stein further discloses the virtual device state is updated in response to the data state change request, the first state is updated in response to the first generated data state change request and the second state is updated in response to the second data state change request [Fukunaga, col. 4, line 47 – col. 5, line 32 and col. 9, line 55 – col. 10, line 26] [Stein, col. 11, lines 43-60].

12. Regarding claims 18 and 34, Fukunaga-Stein further discloses the linking between the virtual device and the first and second devices may be created at run-time [Fukunaga, col. 9, line 55 – col. 10, line 26] [Stein, col. 2, line 60 – col. 3, line 14 and col. 11, lines 43-60].

13. Regarding claims 19 and 35, Fukunaga-Stein further discloses the linking between the virtual device and the first and second devices may be modified at run-time [Fukunaga, col. 9, line 55 – col. 10, line 26] [Stein, col. 2, line 60 – col. 3, line 14 and col. 11, lines 43-60].

14. Regarding claims 20 and 36, Fukunaga-Stein further discloses the linking between the virtual device and the first and second devices may be defined only at

compile time and may only be changed by resetting the master controller [Fukunaga, col. 9, line 55 – col. 10, line 26 and col. 14, lines 14-24] [Stein, col. 2, line 60 – col. 3, line 14 and col. 11, lines 43-60].

15. Regarding claims 37-45, claims 37-45 have similar limitations as disclosed in claims 21-26. Therefore, the similar limitations are disclosed under Fukunaga-Stein for the same reasons set forth in the rejection of claims 21-26 [Supra 21-26].

Allowable Subject Matter

16. Claims 10 and 27 (and their dependent claims 11-17 and 28-33) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter: As to claims 10 and 27, the prior art of record does not teach or suggest the combination of limitations, within the environment, as claimed in the dependent claim with the base claim and the intervening claims. These features of the claimed invention are embodied in the computer architecture [Specification, pp. 17-19]. For example, claim 10 discloses the first and second generated data state changes request are generated by replicating the data state change request received by the virtual device such that the first and second generated data state change requests are substantially

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similar to the data state change request, which is shown in the instant specification [Specification, pp. 19, line 14 – pp. 20, line 10]. The Examiner fails to see any teaching or suggestion in the prior art of record for placing these limitations into the system disclosed in claims 1, 5, and 7.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason D Cardone whose telephone number is (703) 305-8484. The examiner can normally be reached on Mon.-Thu. (9AM-6PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on (703) 305-9705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jason D Cardone
Primary Examiner
Art Unit 2142

February 20, 2004